

REMARKS

Claims 1-7 are pending. By this Amendment, claim 1 has been amended and claim 7 added. No new matter is involved. Claim 1, as amended, positively recites means for calculating a target deceleration of the vehicle based upon the second parameter quantity so as to increase from a predetermined minimum value to a predetermined maximum value along with an increase of the second parameter quantity. This "means for calculating" reads on, for example, electronic control means 30 using, for example, the maps illustrated in Figs. 3 and 8, and described, for example, on page 9, lines 26-30; page 10, lines 1-5, and page 11, lines 16-24.

An Appendix of marked up claim 1 is attached per 37 CFR §1.121.

Initially, Applicants thank Examiner Burch for kindly considering, and citing on a Form PTO-892, U.S. Patent 6,192,305, which Applicants' undersigned representative brought to the Examiner's Attention by telephone after it was recently cited in copending patent application, Serial No. 09/245,711, and for considering the references submitted on May 17, 2001.

Applicants also acknowledge with appreciation the courtesies extended to Mr. Robert J. Webster, their undersigned representative, during the personal interview conducted on June 27, 2002. The remarks, below, contain the Applicant's summary of the interview.

Applicants acknowledge with appreciation, the indication of allowable subject matter in claims 3, 5 and 6. Claims 3, 5 and 6 have not been re-written in independent form, however, because Applicants believe that claim 1, from which these claims depend, is patentable for the reasons stated, below, and these claims are patentable at least for those reasons as well as being allowable in their own right.

The Office Action rejects claims 1-6 under 35 USC §112, first paragraph, because the specification allegedly fails to provide support for "the first parameter quantity exceeding a

threshold value predetermined therefor 'so as to counteract a further increase of the rolling amount by the deceleration of the vehicle' as claimed in lines 9-10 of amended claim 1." This rejection is respectfully traversed.

Claim 1, as amended, does not contain this language. Accordingly, the rejection is moot and should be withdrawn.

The Office Action rejects claims 1-6 under 35 USC §112, second paragraph for failing to particularly point out and distinctly claim the invention. This rejection is respectfully traversed.

The Office Action alleges that the phrase "the target value of the deceleration" in the third to last line of claim 1 is indefinite. Claim 1 has been amended, so that this feature is no longer recited in claim 1. Accordingly, the rejection is moot and should be withdrawn.

Applicant respectfully submits that claim 1 has not been narrowed in scope by the amendments thereto.

The Office Action rejects claims 1 and 2 under 35 USC §103(a) over Halasz in view of Harada. This rejection is respectfully traversed.

Initially, Applicants note that claim 1, as amended, positively recites means for calculating a target deceleration of the vehicle based upon the second parameter quantity so as to increase from a predetermined minimum value to a predetermined maximum value along with an increase of the second parameter quantity.

Halasz fails to decelerate the vehicle or to otherwise try to prevent the overturning of the vehicle, features which are positively recited in the claims, and does not seek to "accomplish a target deceleration of the vehicle," as recited.

The Interview Summary stresses that both Halasz and Harada protect the passenger. However, what is recited in the claims is not a device to protect a passenger, but a device for controlling over-rolling of a vehicle (regardless of whether that vehicle has a live human

passenger or a dummy passenger or is remote controlled). Halasz simply does not try to counteract a further increase of the rolling amount by deceleration of the vehicle, as recited.

To remedy these clear deficiencies, the Office Action turns to Harada, which states that it "...relates to an automatic deceleration control method and apparatus for automatically decelerating a turning vehicle, thereby stabilizing the turning behavior of the vehicle." (see col. 1, lines 8-11).

The Office Action alleges that it would be obvious to have modified Halasz in view of Harada to include a prevention of over-rolling of a vehicle to provide vehicle stability. As modified, Halasz is said to teach the feature of actuating the brake system to accomplish a brake deceleration when the first parameter (alleged to be roll-angle as disclosed in col. 6, lines 12, 13, 15, 16) exceeds a threshold so as to counteract a further increase in the rolling amount by deceleration of the vehicle to the same extent as Applicants.

Harada et al. is directed to deceleration control for a large turning vehicle, such as a truck or bus, to restrain it from excessive rolling (col. 1, lines 36-51). Applicants respectfully submit that the Office Action fails to provide proper motivation to combine the teaching of these references. The first requirement of proper motivation is that a showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This evidence may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. See Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996). However, the suggestion more often comes from the teachings of the pertinent references. See In re Rouffet, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple

references, standing alone, are not "evidence." See Dembiczak, 175 F.3d at 1000, 50 USPQ2d at 1617.

Halasz is totally devoid of active control of the vehicle movement, and makes no attempt to control the vehicle running characteristics, such as roll-over. Instead, Halasz is limited to letting the vehicle roll-over and merely actuating an occupant safety device such as "a seat belt pretensioner mechanism, an air bag, an automatic roll-over bay, a door lock or a cellular phone" (see the Abstract and Background of the Invention, col. 1, lines 1-21). Moreover, Halasz is directed to a "sudden change in acceleration, pitch angle or roll angle of a vehicle" (emphasis added) (col. 1, lines 8-12), and uses filters responsive to a frequency band "...corresponding to or representing acceleration indicative of an impact due to a collision." (col. 6, lines 55-58). Vehicles in collisions are not likely candidates for the teachings of Harada, which are directed to decelerating vehicles which are not disclosed as being involved in collisions.

Moreover, Applicants' representative did not state during the interview that Halasz was not concerned with over rolling, as stated in the Interview Summary. What Applicants' representative stated was that Halasz was not concerned with the over rolling of the vehicle in the sense of controlling the over rolling. Halasz is interested in determining whether a vehicle is going to roll over but makes no attempt to reduce the tendency of, or prevent, the over rolling of the vehicle. Halasz is completely devoid of controlling the tendency of the vehicle to over roll. Halasz's disclosure is only directed to activating one or more safety devices to protect a passenger in the vehicle "in case of a roll-over or pitch-over movement" (col. 4, lines 56-60), and discloses a method and apparatus for predicting roll-overs and pitch-over movements in motor vehicles (col. 4, lines 61-65).

In order to modify Halasz, as suggested in the Office Action, one would have to completely redesign Halasz, who does not disclose or suggest actuating a vehicle roll-over

control. There is no suggestion in Halasz, nor is there any suggestion in Harada to do this. Moreover, there is a disincentive to combine the references, Halasz being directed roll-over and pitch-over movements generated by sudden impacts from a collision, and Harada not being directed to rolling over due to sudden impacts, e.g., collisions. The only suggestion to combine these references is hindsight reconstruction of Applicants' invention, which is improper. Halasz is not at all concerned with trying to control the vehicle to reduce its tendency to roll-over and, therefore, is not at all concerned with brake control, let alone a brake control in which a target determined by a parameter counteracts the parameter.

Moreover, even if the references were somehow combined, they would not disclose or suggest the feature of "means for calculating a target deceleration of the vehicle based upon the second parameter quantity so as to increase from a predetermined minimum value to a predetermined maximum value along with ^{PMM} ~~to~~ an increase of the second parameter quantity." This feature is not addressed in the rejection, or in the Advisory Action. Neither reference discloses this feature and the Office Action fails to explain how such a feature would result from combining both Halasz and Harada.

The Examiner had time to consider the arguments made by Applicants' representative during the interview and discuss them with a Primary Examiner and has stated in the Interview Summary that Halasz's teaching of "about 1G to about 5G's" in col. 7, line 36 functions as a predetermined minimum while the "greater than 5G's functions as the predetermined maximum."

In response to this interpretation of the Halasz reference, Applicants initially point out that Halasz fails to disclose (1) deceleration or (2) a target value of deceleration, as recited in the claims. Therefore, even if Halasz were to disclose a target value of the deceleration is increased from a predetermined minimum value to a predetermined maximum value

according to an increase in the second parameter quantity, Halasz would not disclose claim features (1) and (2).

Applicants respectfully contend that Halasz also does not disclose a target value of the deceleration is increased from a predetermined minimum value to a predetermined maximum value according to an increase in the second parameter quantity.

The Office Action contends that Halasz's first parameter quantity without stating that the parameter is the y-axis roll angle as disclosed in col. 6, lines 12, 13, 15 and 16 and that the second parameter quantity is y-axis acceleration of the rolling amount of the vehicle as disclosed in col. 6, lines 39-41. The Office Action indicates that Halasz generates a control signal (actuation of one vehicular safety device) when the first parameter quantity exceeds a threshold value as disclosed in col. 7, lines 18-19. Applicants note that the claim does not recite merely generating a control signal, but recite means for controlling ^{of} the brake system to counteract the over rolling of the vehicle. The Office Action states that the control is increased (activation of another control device) according to an increase of the second parameter quantity (y-axis acceleration) as disclosed in col. 7, lines 36-46 (which states that a second control signal generator generates a first control signal when the G force exceeds a second predetermined value such as from about 1G to 5G's and a thirds control signal when the G force sensed by the sensor means exceeds a second predetermined value greater than 5G's.

The Office Action is disregarding the explicit claim language. The claim calls for (1) means for calculating a target deceleration of the vehicle based upon the second parameter quantity so as to increase from a predetermined minimum value to a predetermined maximum value along with an increase of the second parameter quantity, and (2) means for controlling of the brake system such that the brake system is actuated to accomplish the target

deceleration of the vehicle when the first parameter quantity exceeds a threshold value predetermined therefor.

Halasz only discloses different thresholds of roll-over or pitch-over values at which different safety devices are triggered. Halasz's first control signal generator 42 triggers a first safety device when either the pitch angle and pitch angle rate exceed a predetermined value indicative of a pitch over condition, or when the roll angle and roll angle rate exceed a predetermined roll-over condition. Halasz's second control generator actuates first and second signals to trigger one safety device when the G force exceeds a second predetermined value, and to trigger another safety device when the G force exceeds a third threshold value.

Applicants' representative also argued, during the interview, that the rejection improperly compares an increase in vehicular behavior parameter, such as deceleration of a vehicle, to an increase of the variety of safety devices operated in parallel, completely disregarding the technical concept of control, and only relying on a verbal format of expression. Applicants' representative also pointed out that the number of safety devices operated in parallel by Halasz is not controlled according to a change rate of the number of safety devices operated in parallel. At this point in the interview, Examiner Burch interrupted this argument, not appearing to be persuaded by it. This argument by Applicants' representative is not discussed in the Interview Summary or the Advisory Action. Applicants continue with this argument, which they believe is persuasive, by also pointing out that, in Halasz, the control of changing the number of safety devices operated in parallel is not started when the number has changed from its standard or neutral state beyond a threshold value to be comparable to the features recited in claim 1 because, since any change in the number of safety devices operated in parallel is a result of the control itself, the control can never start as a matter of logic.

A fair, balanced appraisal of the rejection shows that the Halasz, the primary reference, is totally devoid of any disclosure or suggestion of (1) deceleration or (2) a target value of deceleration, or (3) a predetermined minimum target value of deceleration, or (4) a predetermined maximum target value of deceleration, or (5) means for calculating a target deceleration of the vehicle based upon the second parameter quantity so as to increase from a predetermined minimum value to a predetermined maximum value along with an increase of the second parameter quantity.

Nor does Harada provide these features. Nor is there any proper motivation to combine these references. The Advisory Action indicates that both Halasz and Harada monitor over-rolling parameters to determine the actuation of a vehicular safety device and that the combination merely included the modification of the vehicle safety device of Halasz with the vehicle safety device of Harada which is capable of achieving a target deceleration. This is the type of broad conclusionary statement that is insufficient to motivate one of ordinary skill in the art to add Harada's automatic deceleration system to Halasz - see Dembiczak, cited above.

With respect to claim 2, Halasz discloses measuring three parameters, only one of which is lateral acceleration, and lateral acceleration (around the Z-axis) is not disclosed in col. 7 as being a parameter used to generate the first control signal. There is no indication in either reference to select the first parameter as one which is proportional to lateral acceleration, as recited.

Accordingly, the rejection of claims 1 and 2 under 35 USC 103(a) as unpatentable over Halasz in view of Harada is improper and should be withdrawn.

The Office Action rejects claim 4 under 35 USC §103(a) as unpatentable over Halasz in view of Harada (as applied in the rejection of claim 1) and further ~~to~~^{RM} in view of Ikemoto et al. (U.S. 4,807,128 - hereinafter "Ikemoto")). This rejection is respectfully traversed.

Initially, it is noted that to the extent that the rejection is based on the reference combination of Halasz and Harada, it is improper for the reasons stated above regarding claim 1, from which claim 4 depends.

Ikemoto is applied to teach, in col. 3, line 28, the use of rate of change of the steering angle in the control of vehicle over-roll. The Office Action asserts that it would be obvious to modify the second parameter quantity indicative of a change rate of the variable amount of the vehicle body of Halasz to include a rate of change of the steering angle as taught by Ikemoto to provide an alternate parameter for triggering the necessary target deceleration control.

Ikemoto merely measures the rate of change of the steering angle as one of ^{any} inputs to predict the roll angle of the vehicle. Neither Halasz nor Harada include such a parameter in their devices. Halasz never mentions using a steering angle. Harada appears content to simply use the steering wheel angle and compute a steering wheel angular speed (col. 8, lines 40-64). There is no proper motivation for one of ordinary skill in the art to modify either reference to measure the change rate of the steering angle. The assertion that one could use this parameter as an alternative is, at best, an assertion that it might be feasible, but not that it would be desirable. The only teaching of the desirability of using such a parameter is found in Applicants' disclosure. Thus, the reference combination of Halasz, Harada and Ikemoto is improper and does not render the claimed subject matter obvious for the reasons stated above.

Claim 7 has been added. It is an earlier version of claim 1, without the material which the Examiner indicates has no basis in the disclosure, i.e., without the content that serves as the basis for the rejection of claim 1 under 35 USC §112, first paragraph. This claim is patentable for the same reasons that claim 1 is patentable, in general for the reasons set forth above, and for the following reasons.

The Office Action is disregarding the explicit claim language. The claim calls for increasing the target value of the deceleration from a predetermined minimum to a predetermined maximum according to an increase of the second parameter quantity. In Halasz, there is no concept of (1) deceleration or (2) a target value of deceleration, or (3) a predetermined minimum target value of deceleration, or (4) a predetermined maximum target value of deceleration. Halasz only discloses different thresholds of roll-over or pitch-over values at which different safety devices are triggered. Halasz's first control signal generator 42 triggers a first safety device when either the pitch angle and pitch angle rate exceed a predetermined value indicative of a pitch over condition, or when the roll angle and roll angle rate exceed a predetermined roll-over condition. Halasz's second control generator actuates first and second signals to trigger one safety device when the G force exceeds a second predetermined value, and to trigger another safety device when the G force exceeds a third threshold value.

Applicants' representative also argued, during the interview, that the rejection improperly compares an increase in vehicular behavior parameter, such as deceleration of a vehicle, to an increase of the variety of safety devices operated in parallel, completely disregarding the technical concept of control, and only relying on a verbal format of expression. Applicants representative also pointed out that the number of safety devices operated in parallel by Halasz is not controlled according to a change rate of the number of safety devices operated in parallel. At this point in the interview, Examiner Burch interrupted this argument, not appearing to be persuaded by it. This argument by Applicants' representative is not discussed in the Advisory Action. Applicants continue with this argument, which they believe is persuasive, by also pointing out that, in Halasz, the control of changing the number of safety devices operated in parallel is not started when the number has changed from its standard or neutral state beyond a threshold value to be comparable to the

features recited in claim 1 because, since any change in the number of safety devices operated in parallel is a result of the control itself, the control can never start as a matter of logic.

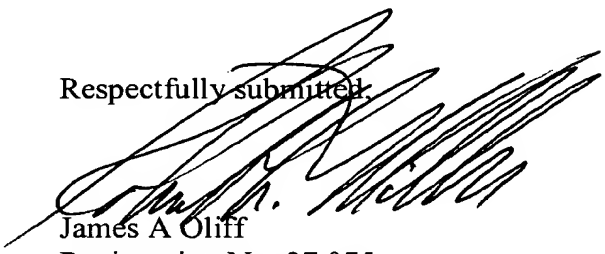
A fair, balanced appraisal of the rejection shows that the Halasz, the primary reference, is totally devoid of any disclosure or suggestion of (1) deceleration or (2) a target value of deceleration, or (3) a predetermined minimum target value of deceleration, or (4) a predetermined maximum target value of deceleration, or (5) increasing the target value of deceleration from a predetermined minimum to a predetermined maximum according to an increase of the second parameter quantity.

Nor does Harada provide these features. Nor is there any proper motivation to combine these references. The Advisory Action indicates that both Halasz and Harada monitor over-rolling parameters to determine the actuation of a vehicular safety device and that the combination merely included the modification of the vehicle safety device of Halasz with the vehicle safety device of Harada which is capable of achieving a target deceleration. This is the type of broad conclusionary statement that is insufficient to motivate one of ordinary skill in the art to add Harada's automatic deceleration system to Halasz - see Dembiczak, cited above. Thus, claim 7 patentably distinguishes over Halasz and Harada, and is allowable.

Accordingly, Applicants respectfully request that the rejections of claims 1, 2 and 4 under 35 USC §103(a) be withdrawn, and claims 1-7 allowed.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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JAO:RJW/sxb

Attachment:
Appendix

Date: August 23, 2002

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<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>

APPENDIX

Changes to Claims:

Claim 7 is added.

The following is a marked-up version of amended claim 1:

1. (Four Times Amended) A device for controlling an over-rolling of a vehicle having a vehicle body, wheels, a steering system, and a brake system, the device comprising:
 - means for providing a first parameter quantity indicative of a rolling amount of the vehicle body,
 - means for providing a second parameter quantity indicative of a change rate of the rolling amount of the vehicle body, and
 - means for calculating a target deceleration of the vehicle based upon the second parameter quantity so as to increase from a predetermined minimum value to a predetermined maximum value along with an increase of the second parameter quantity, and
 - means for controlling of the brake system such that the brake system is actuated to accomplish a target deceleration of the vehicle when the first parameter quantity exceeds a threshold value predetermined therefor so as to counteract a further increase of the rolling amount by the deceleration of the vehicle, wherein a value of the target deceleration is increased from a predetermined minimum value to a predetermined maximum value according to an increase of the second parameter quantity.